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hold a joint meeting on Friday evening, March 10, at the Engineering Societies Building, 29 West 39th Street, on the subject of corrosion. The principal speakers will be Dr. Burton McCollum, Bureau of Standards, Washington, D. C., for the American Institute of Electrical Engineers and Professor William H. Walker, Massachusetts Institute of Technology, Boston, Mass., for the American Electrochemical Society.

UNIVERSITY AND EDUCATIONAL NEWS

THE \$1,800,000 of "University Building Bonds" voted by the people of California through approval of an initiative measure proposed by the alumni of the University of California, for additional building work on the campus at Berkeley, have been segregated by the regents of the university as follows: Benjamin Ide Wheeler Hall, a classroom building with a capacity of 3,500 students, its exterior to be of white granite, \$700,000; completion of the university library, of which the present portion was built at a cost of \$840,000, mostly defrayed by the bequest of Charles F. Doe, \$525,000; second unit of the group of agricultural buildings, \$350,000; first unit of a group of permanent buildings for chemistry, \$160,000; new unit for the heating and power plant, \$70,000; furnishings and equipment for the four structures first mentioned, \$134,000.

THE contract for the new \$60,000 chemistry building for Throop College of Technology was signed March 8, and the construction work was begun at once, the contract calling for the completion of the building in six months, which will be in time for the opening of the fall semester of 1916. This building is of reinforced concrete and hollow tile construction, and will consist of two stories and basement, and contain the research laboratories of Dr. Arthur A. Noyes, who will spend half of each year at Throop College, commencing next winter. The following appointments in the chemistry department for next year have recently been made, William N.

Lacey, Ph.D., University of California, instructor in inorganic and industrial chemistry; Mr. James H. Ellis, of the University of Chicago and Massachusetts Institute of Technology, as research associate in physical chemistry, and Ludwig Rosenstein, Ph.D., of the University of California, who will become professor in inorganic chemistry.

THE Committee on Agriculture of the Massachusetts legislature has the full appropriation of \$382,000 asked for new buildings this year by the Massachusetts Agricultural College.

MESSRS. COOLIDGE AND SHATTUCK, Boston, have been retained as architects for the new buildings of Lakeside Hospital and the medical school of Western Reserve University, and Mr. Abram Garfield, of Cleveland, for the new Babies' Hospital.

DISCUSSION AND CORRESPONDENCE MESOZOIC PATHOLOGY AND BACTERIOLOGY

PALEONTOLOGISTS have not yet fully realized the possible value of geological evidences of disease to students of medicine. This may be due to the recent development of pathology and bacteriology or it may be due to the fact that the paleontology of the fossil vertebrates, especially, is still in a formative state. It is a fact, however, that paleontologists occasionally see objects from the early geological strata which show evidences of pathological or bacteriological activity. It would be of great value to those interested in medical subjects to have these objects discussed, since it would be of undoubted value to an understanding of the origin of disease.

Few attempts, so far as I am aware, have been made to bring to the attention of pathologists the earliest evidences of the occurrence of disease, although in the literature of paleontology one often finds figures of fossil bones showing "exostosal growths." Broken ribs, fractured limb bones, and injured vertebræ, a part or all of which show evidences of pathogenic conditions, are not uncommon. I wish in this place to plead for the proper discussion

of these objects, for in this way we may widen the scope and usefulness of paleontology.

The most notable advance, so far as I am aware, which has been made in this direction, is the work of B. Renault, who, in his large work "*Microorganismes des combustibles fossiles*"¹ has described and figured the bacteria, fungi and other pathogenic forms in the coprolites of fishes and in the coal of the Autun basin. I wish here to call attention to this really epoch-making work, with the thought that there might be others like myself, who were not aware of the existence of this important memoir. I am indebted to Mr. David White for calling my attention to this work and for loaning the volumes containing the memoir. The work is illustrated by 20 folio plates of untouched photomicrographs of bacteria, fungi, etc., and so conclusive is the evidence found there that no one can doubt Renault's conclusions. It is to the coprolites, or fossil feces, that the medical man would turn for evidences of disease and our author has figured and described in coprolites from the fishes of the Autun formations, many interesting colonies of bacteria, fungus growths, cultures of bacilli, organisms analogous to those producing caries of the teeth and many other important features of Mesozoic bacteriology. Some photomicrographs of fossil bone, obtained from the coprolites, showing the ravages of bacteria in the canaliculi, and bone corpuscles, are especially interesting.

So far as Mesozoic pathology is concerned the writer will describe and figure elsewhere a pathological growth involving two caudal vertebrae of a sauropodous dinosaur from the Como Beds of Wyoming. The original specimen belongs to the University of Kansas and I am indebted to Mr. H. T. Martin for the privilege of studying it. The growth looks remarkably like recent bone growths due to chronic osteomyelitis, or a bone tumor, or a callous growth possibly due to a fracture of the tail.

¹ *Bulletin de la Société de l'Industrie minière Saint-Etienne*, Série III., 1899, Tome 13, pp. 865-1,161; 14 (1-2), pp. 5-159, 1900, with Atlas 1898-99, Pl. X.-XXV.; Atlas 1900-01, Pl. I.-V.

Williston² has figured the bones of the arm of a mosasaur showing pathological growth and synostosis of the carpals, possibly due to some infection. In the museum of the University of Kansas there is a mosasaur paddle showing extensive synostoses due either to disease or fracture.

It is interesting to note the possibilities open to paleontologists for the study of fossil remains. It is too early to say that a new field of research is opened up which will yield important results, but certainly such discoveries as may be made in this field of study will be of the greatest interest to those who are studying the activity and nature of modern diseases.

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EFFICIENT SUMMER VACATIONS

THE late Mr. Taylor, efficiency expert extraordinary, once suggested that the pupils of technical schools be required to spend at least one year in commercial shop employment before they graduated. The opening, by Professor Riesman,¹ of the question of what to do with the summer vacation makes this an opportune time to suggest that the idea of compulsory practical experience is too good a one to go by default. But, three periods of three months each, in different plants and in positions of responsibility increasing with the growth of the student, seem to have many superior advantages and I venture to suggest the university control of its students during the summer period and a cooperation between educational and industrial institutions that shall furnish each student with a summer's work complementing that of the school year.

It should be as impossible as it is unnecessary for any student enrolled in a technical or scientific school to waste three months each summer. The graduates who go to work "in the South and Mid-Atlantic region" will not be excused by their employers from work during the summer because it is "out of the

² *Geol. Surv. Kansas*, Vol. IV., Plate LVI., Figs. 3 and 5, 1898.

¹ *SCIENCE*, February 25, 1916, p. 277.